

Patent Claims

1. A wind turbine with a rotor (4), a generator (3) driven by it, which generates electrical power and delivers it to a power system (6), and a control unit (32) which controls the operation of the wind turbine and has a reactive-power control module (321), wherein the control unit (32) has a determining device (35) for a safe minimum active power and a limiting device (323) is provided which is connected to the determining device (35) and to the reactive-power control module (321) and interacts in such a manner that, at the most, as much reactive power is generated that the safe minimum active power is still available.
2. The wind turbine as claimed in claim 1, wherein the determining device (35) has a speed reserve module (351).
3. The wind turbine as claimed in claim 2, wherein the determining device (35) has a rotational acceleration module (352) and/or a blade pitch module (353).
4. The wind turbine as claimed in one of claims 2 or 3, wherein the determining device (35) has a shock vibration damping module (356).
5. The wind turbine as claimed in claim 5, wherein the time constant of the shock vibration damping module (356) is less than $1/8$ of a vibration damper for the normal operation.

6. The wind turbine as claimed in one of the preceding claims, wherein a limit-value transgression module is provided for at least one of the modules.
7. The wind turbine as claimed in claim 6, wherein the limit-value transgression module comprises a dynamic limit value and a static limit value.
8. The wind turbine as claimed in one of the preceding claims, wherein the reactive-power control module (321) is constructed as state controller.
9. The wind turbine as claimed in one of the preceding claims, wherein the determining device (35) has a state observer.
10. A method for controlling the operation of a wind turbine on a power system with a generator, wherein reactive power or reactive current, respectively, is fed into the power system in dependence on a voltage drop in the power system, including determining of a safe minimum active power required for safe continued operation and limiting the reactive power to such a value that at least the safe minimum active power is still generated.